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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/031,442

01/22/2002

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Q68151

6406

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08/20/2004

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EXAMINER

DO, AN H

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|---------------------------------|--|
| Office Action Summary | Application No. 10/031,442 | Applicant(s) MIYAKAWA ET AL. | |
| | Examiner An H. Do | Art Unit 2853 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 13-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>01/22/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Response to Election/Restriction Requirement filed on 27 July 2004 has been acknowledged.

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-12 in the reply filed on 27 July 2004 is acknowledged.
2. Claims 13-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 24 May 2004.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 22 January 2002 was filed and is being considered by the examiner.

Claim Objections

5. Claims 1-3 are objected to because of the following informalities:

In claim 1:

-check the mis-spelling of the term "flourocarbon".

In claims 2 and 3:

- check the mis-spelling of the term "perfloro carbon".

Appropriate correction is required.

6. Claims 4-12 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-12 have not been further treated on the merits.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazama et al (US 6,511,156) in view of Kuhman et al (US 6,243,112).

Regarding claim 1, Kazama et al disclose the following claimed features:

A head member (Figures 1 and 2) including a plurality of ejection ports (nozzles 8) to eject ink, comprising: an ink-repellent film (Figure 3, ink-repelling film 15) on a surface (surface of nozzle plate 7) having said ejection ports (8) open thereon, said ink-repellent film (ink-repelling film 15) made of fluorine resin subjected to plasma polymerization on the surface (column 18, lines 27-49).

Kazama et al disclose all of the claimed limitations except for the following:

Further regarding claim 1, said ink-repellent film made of fluorocarbon resin.

Regarding claim 2, wherein said ink-repellent film is formed by plasma polymerization of linear perfluorocarbon (PFC).

Kuhman et al teach the following:

Further regarding claim 1, said ink-repellent film/coating (column 5, lines 10-12) made of fluorocarbon resin (column 5, lines 10-16), for the purpose of providing an increase in hydrophobicity and mechanical durability of the printhead (column 4, lines 16-18).

Regarding claim 2, wherein said ink-repellent film is formed by plasma polymerization of linear perfluorocarbon (PFC) (perfluoropropane (C_3F_8), see Example 3, column 10, lines 36-43), for the purpose of providing an increase in hydrophobicity and mechanical durability of the printhead (column 4, lines 16-18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have said ink-repellent film made of fluorocarbon resin and formed by plasma polymerization of linear perfluorocarbon (PFC), as taught by Kuhman et al into Kazama et al, for the purpose of providing an increase in hydrophobicity and mechanical durability of the printhead (column 4, lines 16-18).

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazama et al (US 6,511,156) in view of Kuhman et al (US 6,243,112) as applied to claims 1 or 2 above, and further in view of Lee et al (US 6,008,137).

Kazama et al as modified by Kuhman et al do not disclose the following:

- wherein said ink-repellent film is formed by plasma polymerization of linear perfluorocarbon mixed with carbon tetrafluoride.

Lee et al teach the following:

- wherein said ink-repellent film is formed by plasma polymerization of linear perfluorocarbon mixed with carbon tetrafluoride (column 7, lines 16-18), for the purpose

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of imparting the desirable substantially plasma etch bias free characteristic from a patterned layer (column 6, lines 57-59).

It would have been further obvious to one having ordinary skill in the art at the time the invention was made to have said ink-repellent film is formed by plasma polymerization of linear perfluorocarbon mixed with carbon tetrafluoride, as taught by Lee et al into Kazama et al as modified by Kuhman et al, for the purpose of imparting the desirable substantially plasma etch bias free characteristic from a patterned layer (column 6, lines 57-59).

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 571-272-2143. The examiner can normally be reached on Monday-Friday (Flexible).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AD
August 9, 2004

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